We claim:

1. A process for preparing polyolefins in a gas-phase fluidized-bed reactor using a catalyst comprising an organic transition metal compound, wherein the polyolefin prepared has a melt flow rate at 2.16 kg and 190°C in accordance with ISO 1133 of less than 4 g/10 min and a polyolefin having an increased melt flow rate of above 4 g/10 min is produced for a transitional period during a start-up phase.

2. A process as claimed in claim 1, wherein the start-up phase has a duration of from 30 minutes to 30 hours, in particular from 2 hours to 20 hours.

3. A process as claimed in either of the preceding claims, wherein the melt flow rate during the start-up phase is initially above 4.5 g/10 min and is continually decreased to the value below 4 g/10 min.

4. The process as claimed in any of the preceding claims, wherein the temperature is increased by at least 1°C compared to the temperature in long-term operation, at least prior to the start-up phase.

5. A process as claimed in claim 4, wherein the temperature is increased by from 1.5 to 4°C.

6. A process as claimed in claim 4 or 5, wherein the temperature during long-term operation of the reactor is in a range bounded by an upper limit given by equation I

$$T_{RH} = 170 + \frac{6d'}{0.84 - d'} \qquad (I)$$

and a lower limit given by equation II

$$T_{RN} = 173 + \frac{7.3d'}{0.837 - d'} \qquad (II)$$

where the variables have the following meanings:

T_{RH} maximum reaction temperature in °C

T_{RN} minimum reaction temperature in °C

d' value of the density d of the polymer to be produced.

7. A process as claimed in any of the preceding claims, wherein the melt flow rate is regulated via the hydrogen concentration in the reactor.

8. A process as claimed in any of claims 1 to 6, wherein the melt flow rate is regulated via the monomer partial pressure in the reactor.

9. A process as claimed in any of the preceding claims, wherein the polyolefin is a homopolymer or copolymer of ethylene.

10. A process as claimed in any of the preceding claims, wherein the organic transition metal compound is a metallocene.

11. A process as claimed in claim 8, wherein the metallocene is bis(1-methyl-3-butylcyclopentadienyl)zirconium dichloride or bisindenylzirconium dichloride.

12. A process as claimed in any of the preceding claims, wherein an alkylaluminoxane is used as activating compound.